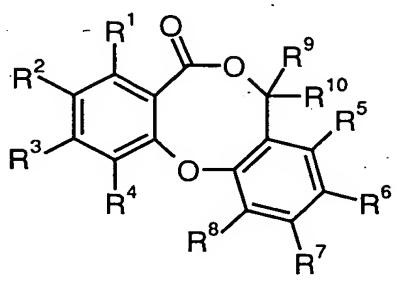
Patent Claims

1. Use of compounds of the general formula (I)

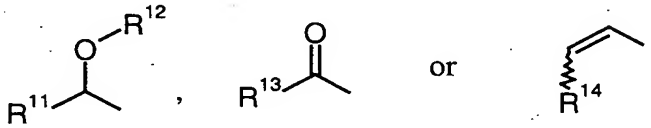


(I),

in which

R^1 represents hydrogen, halogen, cyano, (C_1-C_4)-alkyl, (C_1-C_4)-alkoxy, mono- or di-(C_1-C_4)-alkylamino, trifluoromethyl, trifluoromethoxy, hydroxy, vinyl or ethynyl,

R^2 represents a group of the formula



where

R^{11} represents (C_1-C_6)-alkyl or (C_2-C_6)-alkenyl, each of which may be mono- or polysubstituted by substituents selected from the group consisting of (C_3-C_6)-cycloalkyl, phenyl, (C_1-C_4)-alkoxy and fluorine, or represents (C_6-C_{10})-aryl which may be mono- or disubstituted by identical or different substituents from the group consisting of halogen, (C_1-C_4)-alkyl, (C_1-C_4)-alkoxy, trifluoromethyl and trifluoromethoxy,

R^{12} represents hydrogen or formyl,

R^{13} and R^{14} each represent (C_1-C_6)-alkyl,

R^3 and R^4 independently of one another represent hydrogen, halogen, trifluoromethyl, trifluoromethoxy, (C_1-C_4)-alkyl, (C_1-C_4)-alkoxy, (C_2-C_4)-alkenyl or (C_3-C_6)-cycloalkyl,

R^5, R^6 and R^7 independently of one another represent hydrogen, halogen, cyano, nitro, hydroxy, trifluoromethoxy, formyl, (C_1-C_4)-alkoxy, (C_2-C_4)-alkenyl, (C_3-C_6)-cycloalkyl or represent (C_1-C_4)-alkyl which may be substituted by hydroxy, trifluoromethoxy, (C_1-C_4)-alkoxy or up to three times by fluorine,

R^8 represents (C_1-C_8)-alkyl, (C_2-C_8)-alkenyl or (C_2-C_8)-alkynyl, each of which may be substituted by (C_3-C_8)-cycloalkyl, (C_1-C_4)-alkoxy, pyrrolyl, imidazolyl, triazolyl, tetrazolyl or phenyl which for its part is optionally substituted by (C_1-C_4)-alkyl,

represents (C_6-C_{10})-aryl which may be mono- or disubstituted by identical or different substituents from the group consisting of halogen, (C_1-C_4)-alkyl, (C_1-C_4)-alkoxy, trifluoromethyl, trifluoromethoxy, cyano and nitro,

represents (C_1-C_8)-alkoxy or (C_2-C_8)-alkenyloxy, each of which may be substituted by (C_3-C_8)-cycloalkyl, (C_3-C_8)-cycloalkenyl or phenyl, (which for its part is optionally substituted by halogen, nitro or cyano) or up to five times by fluorine and/or chlorine,

represents (C_3-C_8)-cycloalkoxy or represents (C_6-C_{10})-aryloxy which may be substituted by halogen, nitro or cyano,

represents mono- or di-(C_1-C_8)-alkylamino, (C_1-C_8)-alkylsulphonylamino or *N*-[(C_1-C_8)-alkyl]-(C_1-C_8)-alkylsulphonylamino,

or

represents a group of the formula $-O-SO_2-R^{15}$, $-O-C(O)-R^{16}$, $-O-C(O)-NR^{17}R^{18}$, $-C(O)-OR^{19}$, $-NR^{20}-C(O)-R^{21}$ or $-NR^{22}-C(O)-NR^{23}R^{24}$, where

R^{15} represents (C_1-C_8)-alkyl which may be substituted up to five times by fluorine, represents (C_3-C_8)-cycloalkyl or represents phenyl which may be substituted by halogen or (C_1-C_4)-alkyl,

R^{16} represents (C_1-C_{10})-alkyl which may be substituted by phenyl or phenoxy (which for their part may each be mono- or disubstituted by halogen), by (C_3-C_8)-cycloalkyl, (C_3-C_8)-cycloalkenyl, (C_1-C_6)-alkoxy, (C_1-C_6)-alkylthio, (C_2-C_6)-alkenylthio or up to six times by fluorine,

represents (C_3-C_{12})-cycloalkyl which may be mono- or polysubstituted by substituents selected from the group consisting of phenyl, (C_2-C_6)-alkenyl, trifluoromethyl, (C_1-C_6)-alkyl, cyano and fluorine, where phenyl for its part may be mono- or disubstituted by identical or different substituents from the group consisting of halogen, (C_1-C_4)-alkyl and (C_1-C_4)-alkoxy,

represents (C_3-C_{12})-cycloalkenyl which may be substituted up to three times by (C_1-C_4)-alkyl, trifluoromethyl or fluorine,

represents a 5- to 7-membered mono- or bicyclic saturated or partially unsaturated heterocycle which has up to two heteroatoms from the group consisting of N, O and S and which may be substituted up to two times by (C_1-C_4)-alkyl,

or

represents (C_6-C_{10})-aryl which may be mono- or disubstituted by identical or different substituents from the group consisting of halogen, nitro, cyano, trifluoromethyl, trifluoromethoxy, (C_1-C_4)-alkyl and (C_1-C_4)-alkoxy,

R^{17} and R^{18} independently of one another represent hydrogen, (C_1-C_6)-alkyl which may be substituted by (C_1-C_4)-alkoxycarbonyl or up to three times by fluorine, represent (C_2-C_6)-alkenyl, (C_3-C_8)-cycloalkyl, (C_1-C_4)-alkylsulphonyl or represent phenyl which may be mono- or disubstituted by identical or different substituents from the group consisting of halogen and trifluoromethyl,

or

together with the nitrogen atom to which they are attached form a 4- to 12-membered mono-, bi- or tricyclic saturated or partially unsaturated heterocycle which may contain up to two further heteroatoms from the group consisting of N, O and S and which may be substituted by phenyl or up to four times by (C_1-C_4)-alkyl,

R^{19} represents (C_1-C_6)-alkyl which may be substituted by (C_3-C_8)-cycloalkyl, represents (C_3-C_{10})-cycloalkyl which may be substituted up to two times by (C_1-C_4)-alkyl or represents (C_2-C_6)-alkenyl,

R^{20} represents hydrogen or (C_1-C_6)-alkyl,

R^{21} represents (C_1-C_8)-alkoxy, (C_1-C_8)-alkyl, (C_6-C_{10})-aryl or represents (C_3-C_{10})-cycloalkyl which may be substituted up to two times by (C_1-C_4)-alkyl,

R^{22} represents hydrogen or (C_1-C_6)-alkyl,

and

R^{23} and R^{24} independently of one another represent hydrogen, (C_1-C_6)-alkyl or (C_3-C_{10})-cycloalkyl,

and

R^9 and R^{10} independently of one another represent hydrogen or (C_1-C_4)-alkyl,

and their pharmaceutically acceptable salts, solvates and solvates of the salts,

for the treatment and/or prevention of disorders controlled by inhibition of the cholesterol ester transfer protein (CETP).

2. Use of compounds of the formula (I), as defined in Claim 1 for preparing medicaments for the treatment and/or prevention of disorders controlled by inhibition of the cholesterol ester transfer protein (CETP).

3. Compounds of the formula (I) as defined in Claim 1 for the treatment and/or prevention of disorders controlled by inhibition of the cholesterol ester transfer protein (CETP).

4. Use according to Claim 1 or 2 for the treatment and/or prevention of cardiovascular disorders.

5. Use according to Claim 1 for the treatment and/or prevention of hypolipoproteinaemia, dyslipidaemias, hypertriglyceridaemias, hyperlipidaemias and/or arteriosclerosis.

6. Compounds of the formula (I) as defined in Claim 1 in which

R^8 represents a group of the formula -O-C(O)-R^{16} where

R^{16} represents (C_1-C_{10})-alkyl which may be substituted by phenyl or phenoxy (which for their part may each be mono- or disubstituted by halogen), by (C_3-C_8)-cycloalkyl, (C_3-C_8)-cycloalkenyl, (C_1-C_6)-alkoxy, (C_1-C_6)-alkylthio, (C_2-C_6)-alkenylthio or up to six times by fluorine,

represents (C_3-C_{12})-cycloalkyl which may be mono- or polysubstituted by substituents selected from the group consisting of phenyl, (C_2-C_6)-alkenyl, trifluoromethyl, (C_1-C_6)-alkyl, cyano and fluorine, where phenyl for its part may be mono- or disubstituted by identical or different substituents from the group consisting of halogen, (C_1-C_4)-alkyl and (C_1-C_4)-alkoxy,

represents (C_3-C_{12})-cycloalkenyl which may be substituted up to three times by (C_1-C_4)-alkyl, trifluoromethyl or fluorine,

represents a 5- to 7-membered mono- or bicyclic saturated or partially unsaturated heterocycle which has up to two heteroatoms from the group consisting of N, O and S and which may be substituted up to two times by (C_1-C_4)-alkyl,

or

represents (C_6-C_{10})-aryl which may be mono- or disubstituted by identical or different substituents from the group consisting of halogen, nitro, cyano, trifluoromethyl, trifluoromethoxy, (C_1-C_4)-alkyl and (C_1-C_4)-alkoxy,

and R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^9 and R^{10} are each as defined in Claim 1.

7. Compounds of the general formula (I) as defined in Claim 1 in which

R^8 represents a group of the formula -O-C(O)-$NR^{17}R^{18}$ where

R^{17} and R^{18} independently of one another represent hydrogen, (C_1-C_6)-alkyl which may be substituted by (C_1-C_4)-alkoxycarbonyl or up to three times by fluorine, represent (C_2-C_6)-alkenyl, (C_3-C_8)-cycloalkyl, (C_1-C_4)-alkylsulphonyl or represent phenyl which may be mono- or disubstituted by identical or different substituents from the group consisting of halogen and trifluoromethyl

or

together with the nitrogen atom to which they are attached form a 4- to 12-membered mono-, bi- or tricyclic saturated or partially unsaturated heterocycle which may contain up to two further heteroatoms from the group consisting of N, O and S and which may be substituted by phenyl or up to four times by (C_1-C_4)-alkyl,

and R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^9 and R^{10} are each as defined in Claim 1.

8. Compounds of the formula (I) as defined in Claim 1 in which

R^8 represents a group of the formula -C(O)-OR^{19} where

R^{19} represents (C_1-C_6)-alkyl which is substituted by (C_3-C_8)-cycloalkyl or represents (C_3-C_{10})-cycloalkyl which may be substituted up to two times by (C_1-C_4)-alkyl,

and R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^9 and R^{10} are each as defined in Claim 1.

9. Compounds of the formula (I) as defined in Claim 1 in which

R^8 represents a group of the formula -NR^{20}-C(O)-R^{21} where

R^{20} represents hydrogen or (C_1-C_6)-alkyl,

and

R^{21} represents (C_1-C_8)-alkoxy, (C_1-C_8)-alkyl, (C_6-C_{10})-aryl or represents (C_3-C_{10})-cycloalkyl which may be substituted up to two times by (C_1-C_4)-alkyl,

and R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^9 and R^{10} are each as defined in Claim 1.

10. Compounds of the formula (I) as defined in Claim 1 in which

R^8 represents a group of the formula $-NR^{22}-C(O)-NR^{23}R^{24}$ where

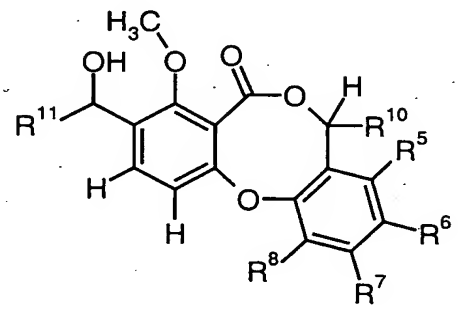
R^{22} represents hydrogen or (C_1-C_6)-alkyl,

and

R^{23} and R^{24} independently of one another represent hydrogen, (C_1-C_6)-alkyl or (C_3-C_{10})-cycloalkyl,

and R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^9 and R^{10} are each as defined in Claim 1.

11. Compounds of the formula (I-A)

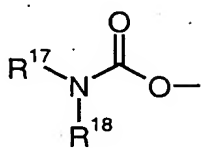
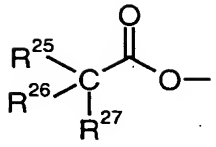


(I-A),

in which

R^5, R^6 and R^7 independently of one another represent hydrogen, fluorine, chlorine, bromine, cyano or represent methyl or ethyl which may be substituted by methoxy or up to three times by fluorine,

R^8 represents a group of the formula

 or 

where

R^{17} and R^{18} independently of one another represent hydrogen, $(C_1$-$C_6)$-alkyl which may be substituted up to three times by fluorine, represent $(C_3$-$C_6)$-alkenyl or represent $(C_3$-$C_6)$-cycloalkyl,

or

together with the nitrogen atom to which they are attached form a 4- to 10-membered mono-, bi- or tricyclic saturated or partially unsaturated heterocycle which may contain an oxygen atom as further heteroatom and which may be substituted up to four times by methyl,

R^{25} and R^{26} together with the carbon atom to which they are attached represent $(C_3$-$C_{10})$-cycloalkyl which may be substituted up to four times by substituents selected from the group consisting of fluorine, methyl and trifluoromethyl, represent $(C_5$-$C_{10})$-cycloalkenyl which may be substituted up to two times by methyl or represent a 5- to 7-membered saturated or partially saturated mono- or bicyclic heterocycle having a ring oxygen atom,

and

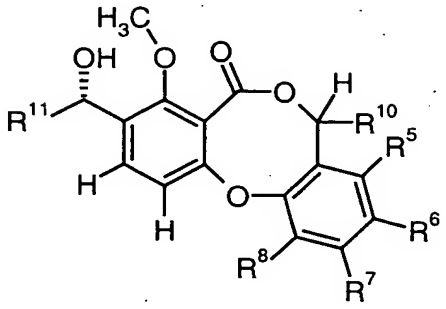
R^{27} represents hydrogen, $(C_1$-$C_4)$-alkyl, cyano or trifluoromethyl,

R^{10} represents hydrogen, methyl or ethyl,

and

R^{11} represents (C_1-C_6)-alkyl or (C_2-C_6)-alkenyl, each of which may be mono- to trisubstituted by substituents selected from the group consisting of cyclopropyl, cyclobutyl, methoxy and fluorine.

12. Compounds of the formula (I-B)

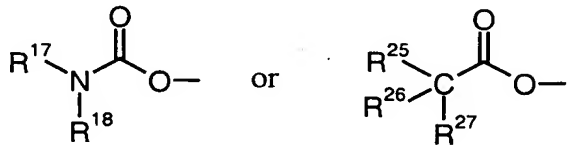


(I-B),

in which

R^5, R^6 and R^7 independently of one another represent hydrogen, fluorine, chlorine, bromine, cyano or represent methyl or ethyl which may be substituted by methoxy or up to three times by fluorine,

R^8 represents a group of the formula



where

R^{17} and R^{18} independently of one another represent (C_1-C_6)-alkyl which may be substituted up to three times by fluorine, represent (C_3-C_6)-alkenyl or represent (C_3-C_6)-cycloalkyl,

or

together with the nitrogen atom to which they are attached form a 4- to 10-membered saturated mono- or bicyclic heterocycle which may contain an oxygen atom as further heteroatom and which may be substituted up to two times by methyl,

R^{25} and R^{26} together with the carbon atom to which they are attached represent (C_3-C_{10})-cycloalkyl which may be substituted up to four times by substituents selected from the group consisting of fluorine, methyl and trifluoromethyl, represent (C_5-C_7)-cycloalkenyl, 7-oxabicyclo[2.2.1]heptanyl or represent 7-oxabicyclo[2.2.1]hept-5-enyl,

and

R^{27} represents methyl, ethyl, propyl, cyano or trifluoromethyl,

R^{10} represents hydrogen, methyl or ethyl

and

R^{11} represents (C_1-C_6)-alkyl or (C_2-C_6)-alkenyl, each of which may be mono- to trisubstituted by substituents selected from the group consisting of cyclopropyl, cyclobutyl, methoxy and fluorine.

13. Use of compounds of the formulae (I), (I-A) and (I-B) as defined in Claims 6 to 12 for preparing medicaments for the treatment and/or prevention of disorders controlled by inhibition of the cholesterol ester transfer protein (CETP).

14. Use of compounds of the formulae (I), (I-A) and (I-B) as defined in Claims 6 to 12 for the treatment and/or prevention of disorders controlled by inhibition of the cholesterol ester transfer protein (CETP).

15. Compounds of the formulae (I), (I-A) and (I-B) as defined in Claims 6 to 12, for the treatment and/or prevention of disorders controlled by inhibition of the cholesterol ester transfer protein (CETP).

16. Use according to Claim 13 or 14 for the treatment and/or prevention of cardiovascular disorders.

17. Use according to Claim 16 for the treatment and/or prevention of hypolipoproteinaemia, dyslipidaemias, hypertriglyceridaemias, hyperlipidaemias and/or arteriosclerosis.

18. Medicaments, comprising a compound of the formula (I), (I-A) or (I-B) as defined in Claims 1 to 12, for the treatment and/or prevention of disorders controlled by inhibition of the cholesterol ester transfer protein (CETP).